WHAT IS CLAIMED IS:

1. A method of correcting for dark current in a solid state image sensor, comprising the steps of:

a) capturing an image with the image sensor to produce a digital image having pixel values;

b) correcting the pixel values with a dark level correction value;

c) employing a control system to adjust the dark level correction value to drive the number of pixels having values lower than a predetermined value chosen to represent dark scene content to a predetermined range.

2. The method claimed in claim 1, wherein the control system limits the adjustment to the dark current correction to a predetermined range around a factory calibration value, whereby the control system is prevented from overcorrecting.

3. The method claimed in claim 1, wherein the sensor captures a stream of digital images, and wherein the control system performs the steps of:

c1) sampling a digital image from the stream of dark current corrected digital images;

c2) generating a count of the number of pixel values in the sampled digital image that are less than a predetermined value;

c3) generating a dark level correction value adjustment based on the pixel value count; and

c4) applying the adjustment to the dark level correction value.

4. The method claimed in claim 3, further comprising the step of sub-sampling the sampled digital image to produce a sub-sample of pixel values from the sampled image and employing the sub-sample of pixel values to generate the count.

5. The method claimed in claim 4, wherein the step of generating a count includes the steps of generating a histogram of the pixel values in the sub-sample and summing bins in the histogram from zero to the predetermined value.

6. The method claimed in claim 5, wherein the step of generating a dark level correction value adjustment includes the step of limiting the adjustment such that the dark level correction value is limited to a predetermined range around a factory calibration value, whereby the control system is prevented from overcorrecting.

7. The method claimed in claim 3 wherein the dark level correction value adjustment increases the dark level correction value when the count is lower than a first predetermined value; decreases the dark level correction value when the count is higher than a second predetermined value; and does not change the dark level correction value when the count is between the first and second predetermined values.

8. A method of correcting for dark current in a solid state image sensor, comprising the steps of:

a) capturing a first image having a variable dark level;

b) converting the first captured image to digital pixel values;

c) processing the digital pixel values to determine the number of pixels having values below a dark level threshold pixel value;

d) providing an dark correction value based on said number of pixels; and

e) using the dark correction value to modify the digital pixel values of a second captured image.

9. Apparatus for correcting dark current in a solid state image sensor that produces digital images having pixel values, comprising:

a) a dark level corrector for correcting the pixel values produced by the image sensor with a dark level correction value to produce dark level corrected pixel values, and

b) a control system responsive to dark level corrected pixel values to adjust the dark level correction value to drive the number of pixels having values lower than a predetermined value chosen to represent dark scene content to a predetermined range.

10. The apparatus claimed in claim 9, wherein the control system includes means for limiting the adjustment to the dark current correction to a predetermined range around a factory calibration value, whereby the control system is prevented from overcorrecting.

11. The apparatus claimed in claim 9, wherein the sensor captures a stream of digital images, and wherein the control system includes:

c1) means for sampling a digital image from the stream of dark current corrected digital images;

c2) means for generating a count of the number of pixel values in the sampled digital image that are less than a predetermined value;

c3) means for generating a dark level correction value adjustment based on the pixel value count; and

c4) means for applying the adjustment to the dark level correction value.

12. The apparatus claimed in claim 11, further comprising means for decimating the sampled digital image to produce a sub-sample of pixel values from the sampled image and wherein the means for generating a count employs the sub-sample of pixel values to generate the count.

13. The apparatus claimed in claim 12, wherein the means for generating a count includes means for generating a histogram of the pixel values

in the subsample and summing bins in the histogram from zero to the predetermined value.

14. The apparatus claimed in claim 13, wherein the means for generating a dark level correction value adjustment includes means for limiting the adjustment such that the dark level correction value is limited to a predetermined range around a factory calibration value, whereby the control system is prevented from overcorrecting.

15. The apparatus claimed in claim 12 wherein the means for generating a dark level correction value adjustment increases the dark level correction value when the count is lower than a first predetermined value; decreases the dark level correction value when the count is higher than a second predetermined value; and does not change the dark level correction value when the count is between the first and second predetermined values.

16. A computer program product for correcting for dark current in a solid state image sensor, performing the steps of:

a) providing a dark current corrected digital image having pixel values that have been adjusted by a dark level correction value from a stream of digital images that have been generated by the image sensor;

b) generating a count of the number of pixel values in the digital image that are less than a predetermined value;

c) generating a dark level correction value adjustment based on the pixel value count; and

d) applying the adjustment to the dark level correction value.

17. The computer program product claimed in claim 16, further comprising the step of decimating the sampled digital image to produce a sub-sample of pixel values from the sampled image and employing the sub-sample of pixel values to generate the count.

18. The computer program product claimed in claim 17, wherein the step of generating a count includes the steps of generating a histogram of the pixel values in the sub-sample and summing bins in the histogram from zero to the predetermined value.

19. The computer program product claimed in claim 18, wherein the step of generating a dark level correction value adjustment includes the step of limiting the adjustment such that the dark level correction value is limited to a predetermined range around a factory calibration value, whereby the control system is prevented from overcorrecting.

20. The computer program product claimed in claim 16, wherein the dark level correction value adjustment increases the dark level correction value when the count is lower than a first predetermined value; decreases the dark level correction value when the count is higher than a second predetermined value; and does not change the dark level correction value when the count is between the first and second predetermined values.